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(54) **CADENCE EDITING**

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(57) **ABSTRACT**

A method for reordering an edited digital video sequence
composed of digital video fields from multiple sources is
disclosed. When the digital video sequence is reordered
temporal cadence is provided which will allow for the
conversion to a digital film format through a reverse 3:2
pulldown. Let $F^{old}=(F_1^{old}, F_2^{old}, \ldots, F_N^{old})$ be the given
edited sequence of video fields. In one embodiment, the
method calculates an instruction set which is then used to
transform F^{old} into a new sequence of video fields, denoted
F^{new}, where most of the fields in F^{new} come from F^{old} and
the remaining fields are "upconverted" fields from F^{old}. This
reconstitution of F^{old} is obtained by optimizing a set of
instructions based on various constraints which express the
characteristics of the pattern AaBbBcCdDd. By assigning a
cost to each violation of the constraints, and to each disrup-
tion of the natural flow of time, and to other undesirable
properties, a real-valued function is constructed. This real
valued function can then be optimized through dynamic
programming.

71 Claims, 11 Drawing Sheets